

n. 212. On *Ranunculus Ficaria*. Common. White, sporidia irregularly oblong, slightly curved.

136. *Uredo Artemisiæ*. Chev. Fl. Par. vol. i. p. 399; Berk. Brit. Fung. Fasc. 3. n. 235. On *Artemisia Absinthium*, King's Cliffe.

137. *Uredo pompholygodes*, Schlecht. in Linn. vol. i. p. 248; Berk. Brit. Fung. Fasc. 3. n. 236. On *Anemone nemorosa*, King's Cliffe, May. It is to be observed that *U. Ranunculacearum*, Dec., is at least in great part the same species with the present, of which *U. Anemones*, Dec. Fl. Franc. is a synonym. Consequently the species described in Eng. Fl. under the name of *U. Ranunculacearum* on Link's authority, must bear the name of *Uredo Ficariæ*, Alb. and Schwein.

XXVIII.—On the Ant Tree of Guiana (*Triplaris Americana*).

By ROBERT SCHOMBURGK, Esq.\*

TRIPLARIS, LINN.

Class IX. Ord. II. Ord. Nat. POLYGONÆ, JUSS.

Flores dioici. Calyx basi tubulosus, pilosus. *Flores Masc.* Calyx limbo 6-partitus. Corolla 0. Stamina 9. *Flores Fem.* Calyx 3-partitus. Corolla 3-petala. Ovarium 3-quetrum. Styli tres. Akenium 3-quetrum, calyce aucto tectum.

*T. Americana*, foliis alternis, integerrimis, oblongis, acutis, nervosis; stipulis lanceolatis laceris, spicis terminalibus axillaribusque brachiatis.

*Triplaris Americana*, Linn. *Sp. Pl.* p. 130. *Aubl. Guian.* ii. p. 915. t. 347.—*T. Pyramidalis*, Jacq. *Amer.* 13. t. 173. f. 5.

A TREE from fifty to sixty feet in height; its trunk smooth, of a greyish colour; the branches erect, frequently in the form of a pyramid; leaves entire, oblong and narrow, from nine to twelve inches long, of a dark green colour; petiole dilated at the base, somewhat amplexicaule, with ochreate stipulæ, and marks at the opposite direction, as of fallen-off petioles; flowers unisexual. *Males*: calyx hairy, tubular, surrounded by a lacinated bractea, six-parted; corolla absent; stamens nine, divided in three parcels of different sizes, the large ones opposite the segments of the calyx, filaments somewhat crooked; anthers ovate, two-celled, dehiscing lengthwise. *Females*: calyx provided with the bractea, three-

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parted; petals three, lanceolate; ovarium superior; styles or stigmas three; alkenia triangular, protected by the calyx; seed farinaceous.

Dr. Lindley, in his Natural System of Botany, in speaking of the geographical distribution of *Polygoneæ*, observes, "There are few parts of the world that do not acknowledge the presence of plants of this order. In Europe, Africa, North America, and Asia, they fill the ditches, hedges, and waste grounds, in the form of Docks and Persicarias; the fields, mountains, and heaths, as Sorrels and training and twining Polygonums; in South America and the West Indies they take the form of Coccolabas or sea-side grapes; in the Levant of Rhubarbs; and even in the desolate regions of the North Pole they are found in the shape of Oxyria."

The object of my description adds another instance to illustrate these remarks; the *Triplaris*, which pronounces, in its habits of growth, leaves, stipulæ, its triangular nut protected by the calyx, the farinaceous albumen, &c. its relationship to that tribe, extends from Columbia to the verge of Brazil's western boundary. The sandy banks of the inland rivers of Guiana are peopled with them; and when shrubs, stunted in growth by the poverty of the soil, scarcely reach the height of five or six feet, the *Triplaris* overtops them forty or fifty feet. The trunk is slender and grows up straight, and its erect branches form a pyramid. As already observed, it is unisexual, and the flowers of both sexes are insignificant: those of the male last only for a few days, when they dry up; this is likewise the case with the petals of the females: the segments of the calyx however continue to grow, changing in their growth from green to white and vermilion, and become so attenuated that the branched nerves are easily perceptible. In that state they are three times as large as the fruit, which is still protected by the tube of the calyx, and the whole might in appearance be resembled to a shuttlecock. The risps are dense, and the tree presents now a most elegant appearance. One unacquainted with the contrary, would consider the tree covered with white blossoms, tinged with red, among which the dark green leaves have only occasionally room to make themselves visible. The uncautious botanist, who, allured by the deceptive appearance,

should approach the tree to pluck the blossoms, would bitterly rue his attempt. The trunk and branches of the tree are hollow, like those of the trumpet tree (*Cecropia*), and provided between space and space with partitions, which answer to the position of the leaves on the outside.

These hollows are inhabited by a light brownish ant, about two to three tenths of an inch long, which inflicts the most painful bites. Its antennæ are placed near the middle of the anterior portion of the head; mandibles triangular; peduncle of the abdomen with two rings; the anus hairy and provided with a sting or piercer (*Myrmica*, Latr., nova species). They fall upon their prey with the greatest virulence, and insert their mandibles almost instantly, as soon as they come in contact with any soft substance, emitting a whitish fluid; their bite causes swelling and itching for several days. If they find themselves captured, they attack and kill one another like the scorpions.

The Arawak Indians call the tree Jacuna, and the ant Jacuna sae; the Warrows Epouahari, the literary translation being ant tree; the Caribis Itassi; the colonists, from its growth, "long John."

The presence of the scarious stipulæ, in the form of an ochrea, is sufficient to determine the natural order to which *Triplaris* belongs; other evidences, namely, the formation of its leaves, its organs of fructification, and particularly the erect ovulum and the superior radicle, put its relationship to *Polygonæ* beyond doubt. It resembles strikingly the *Coccoloba* in the form of its petiole, and the manner in which it is attached to the stem; we have in *Coccoloba* a similar mark opposite the petiole, and those asperities which are to be found below the latter organ are likewise observable in *Triplaris*. In *Coccoloba* the calyx swells and forms a juicy berry, in *Triplaris* it becomes three times as large as the nut. In its hollow trunk and branches, and the septums of the latter; in the division of the sexes, it resembles *Cecropia*; but to these affinities in appearance but little importance can be attached.

*Triplaris* has received hitherto a very meagre description. Jacquin gives the representation of its fruit, and Aublet a branch; it is however evident that the flowers of the male

were described from those of the female flower: the bractea, present in both, has been completely passed over; the calyx of the male is stated to be three-parted, while it is six-parted; and the pubescence, which is present in the calyx of both sexes, has been likewise omitted; the bractea is likewise covered with hair.

River Quitaro, Lat. 2°. 50'. N., November 1837.

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XXIX.—*On the Root of the Madder.* By M. DECAISNE.

IN the valuable ‘*Recherches Anatomiques et Physiologiques sur la Garance,*’ lately published at Paris by M. Decaisne, that gentleman gives the following interesting account of the root.

The roots of the Madder or Turkey red (*Rubia tinctorum*) are of the form generally described as a *branching root*, for though undivided when young, they shortly begin to ramify, though the original shoot remains the thickest; their anatomy, which I shall proceed in few words to describe and trace through its several stages of growth, will explain their structure.

During the first days of germination, and while the plant has no other leaves than its two cotyledons, the root is simple and unbranched; its upper part, immediately below the neck, being covered with very slender fibrillæ, which closely clasp the grains of sand with which they may come in contact. If the young root be cut horizontally across at this part, it will be seen to consist, looking from the circumference to the centre, of, first, a row of extremely small cortical cells, some of which emit externally a very fine and simple prolongation, constituting the above-mentioned fibrillæ, in the same way as the epidermal tissue of leaves gives rise to hairs. After this row of cortical cells comes a thicker or thinner layer of cellular tissue, whose divisions diminish in size as they approach the centre, while the innermost part is almost confounded with the fibrous tissue which surrounds the vessels occupying the whole middle of the root. The vertical section of a young rootlet (if it may be so termed) exhibits the cortical cells arranged in nearly regular longitudinal series, slenderer than the others; then those which compose the fleshy portion in series which become more and more regular